CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

ENDC/240
18 March 1969
ENGLISH
Original: RUSSIAN

UNION OF SOVIET SOCIALIST REPUBLICS:
DRAFT TREATY ON PROHIBITION OF THE USE FOR MILITARY PURPOSES OF THE SEA-BED AND THE OCEAN FLOOR AND THE SUBSOIL THEREOF

The States Parties to this Treaty,

Noting that developing technology makes the sea-bed and the ocean floor and the subsoil thereof accessible and suitable for use for military purposes,

Considering that the prohibition of the use of the sea-bed and the ocean floor for military purposes serves the interests of maintaining world peace and reducing the arms race, promotes relaxation of international tension and strengthens confidence among States,

Being convinced that this Treaty will contribute to the fulfilment of the purposes and principles of the United Nations,

Have agreed as follows:

Article 1

The use for military purposes of the sea-bed and the ocean floor and the subsoil thereof beyond the twelve-mile maritime zone of coastal States is prohibited.

It is prohibited to place on the sea-bed and the ocean floor and the subsoil thereof objects with nuclear weapons or any other types of weapons of mass destruction, and to set up military bases, structures, installations, fortifications and other objects of a military nature.

Article 2

All installations and structures on the sea-bed and the ocean floor and the subsoil thereof shall be open on the basis of reciprocity to representatives of other States Parties to this Treaty for verification of the fulfilment by States which have placed such objects thereon of the obligations assumed under this Treaty.

Article 3

The outer limit of the twelve-mile maritime zone established for the purposes of this Treaty shall be measured from the same base-lines as are used in defining the limits of the territorial waters of coastal States.

Article 4

1. This Treaty shall be open for signature to all States. Any State which does not sign the Treaty before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and of accession shall be deposited with the Governments of ...., which are hereby designated the Depositary Governments.

3. This Treaty shall enter into force after the deposit of instruments of ratification by five Governments, including the Governments designated as Depositary Governments.

4. For States whose instruments of ratification or accession are deposited after the entry into force of this Treaty it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. Each Party shall in exercising its national sovereignty have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it considers to have jeopardized its supreme interests.

6. The Depositary Governments shall forthwith notify the Governments of all States signatory and acceding to this Treaty of the date of each signature, of the date of deposit of each instrument of ratification or of accession, of the date of the entry into force of this Treaty, and of the receipt of other notices.

7. This Treaty shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

Article 5

This Treaty, the English, Russian, French, Spanish and Chinese texts of which are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Treaty shall be transmitted by the Depositary Governments to the Governments of the States signatory and acceding thereto.

IN WITNESS WHEREOF the undersigned, being duly authorized thereto, have signed this Treaty.

DONE in .... at ...., this .... day of ....., ...

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

ENDC/241
24 March 1969
ENGLISH
Original: SPANISH

Conference of the Eighteen Nation Disarmament Committee

MEXICO

ESTABLISHMENT OF NUCLEAR-FREE ZONES

WORKING DOCUMENT

The establishment of nuclear-free zones - a question which the Eighteen Nation Committee on Disarmament decided to include in its programme of work on 15 August 1968 - is an effective measure of nuclear disarmament. Indeed, it necessarily implies the absolute prohibition of nuclear weapons in the territories of all the States that are Parties to the treaty establishing the zone. The aim of the treaty in question, unlike that of a treaty such as the non-proliferation treaty, should be to guarantee the total absence of nuclear weapons in the zone to which it applies, regardless of which State owns or controls such weapons. Consequently, if it were feasible, for example, to bring into force a universal treaty similar to the Treaty for the Prohibition of Nuclear Weapons in Latin America or Treaty of Tlatelolco, the problem of nuclear disarmament would be automatically solved, for this would imply the elimination of the gigantic nuclear arsenals existing in the world today.

As can be seen from the book on disarmament published not long ago by the Secretariat of the United Nations[1], and likewise from the study prepared by Dr. Peter Cacii[2] for the Conference of Non-Nuclear Weapon States, the first proposals for the establishment of nuclear-free zones were put forward over ten years ago. Since then, suggestions for such zones have been made with regard to many geographical areas, including Central Europe, the Scandinavian countries, the Mediterranean, the Balkans, the Middle East, Asia and the Pacific, Africa, and Latin America, to list only projects relating to lands inhabited by man.

1/ The United Nations and Disarmament, 1945 to 1965, United Nations, New York, 1967, pp. 209-211.

2/ A/CONF.35/Doc.9.

CE.69-7012
69-08696

Among all these proposals, those referring to the only two zones - Africa and Latin America - concerning which the General Assembly of the United Nations has actually adopted resolutions have been chosen, for the purpose of giving a brief description of their development in part I of this working document. To supplement this retrospective review, part II of the document gives a summary analysis of the Treaty of Tlatelolco, the only multilateral treaty it has been possible to conclude for the establishment of a nuclear-free zone comprising territories inhabited by man, the scope of the analysis being restricted to the two parallel questions of the obligations contracted by the States Parties to the treaty and those to be contracted by the nuclear Powers under Additional Protocol II. The last part of this document - part III - contains the main conclusions to be drawn from parts I and II.

I. Development of the proposals relating to Africa and Latin America

A. AFRICA

The first resolution to be approved by the General Assembly on the establishment of nuclear-free zones was resolution 1652 (XVI), entitled "Consideration of Africa as a denuclearized zone"[3/] adopted by the Assembly on 24 November 1961. Among the provisions of this resolution was one calling upon Member States "to refrain from using the territory, territorial waters or air space of Africa for testing, storing or transporting nuclear weapons", and "to consider and respect the continent of Africa as a denuclearized zone".

Nearly three years later, in July 1964, the Assembly of Heads of State and Government of the Organization of African Unity adopted a declaration[4/] in which, after confirming the above-mentioned resolution, the participating Heads of State and Government solemnly declared that they were ready to undertake, "through an international agreement to be concluded under United Nations auspices, not to manufacture or control atomic weapons", and requested the General Assembly of the United Nations to take "the necessary measures to convene an international conference for the purpose of concluding an agreement to that effect".

3/ Annex I.

4/ A/5975.

The Assembly took note of this declaration and of a draft resolution submitted by a large group of African States at its twentieth session, when it adopted, on 3 December 1965, resolution 2033 (XX) entitled "Declaration on the Denuclearization of Africa"[5/]. The provisions of paragraphs 7 and 9 of that resolution are particularly relevant here.

In paragraph 7 - the wording of which must certainly have been suggested by that of operative paragraph 2 of the resolution approved the year before on the denuclearization of Latin America - the Assembly expressed the hope "that the African States will initiate studies, as they deem appropriate, with a view to implementing the denuclearization of Africa, and take the necessary measures through the Organization of African Unity to achieve this end".

In paragraph 9, the Secretary-General was requested "to extend to the Organization of African Unity such facilities and assistance as may be requested in order to achieve the aims of the present resolution".

The resolution was adopted without a single vote against, but no great progress seems yet to have been made towards the attainment of its aims.

(B) Latin America

On 29 April 1963, five Latin American Presidents drafted a joint declaration[6/] in which, in the name of their peoples and Governments, they announced that the latter were prepared to sign a multilateral Latin American Agreement whereby they would undertake "not to manufacture, receive, store or test nuclear weapons or nuclear launching devices".

Seven months later, the General Assembly approved, on 27 November 1963, resolution 1911 (XVIII), entitled "Denuclearization of Latin America"[7/], in which the Assembly invoked in forthright terms the support and encouragement of the world community for the initiative embodied in the declaration, noting that initiative "with satisfaction" and expressing the hope that the States of Latin America would initiate studies "concerning the measures that should be agreed upon with a view to achieving the aims of the said declaration". The Assembly furthermore requested the Secretary-General to extend "to the States of Latin America, at their request, such technical facilities as they may require in order to achieve the aims set forth" in the declaration.

5/ Annex II.

6/ A/5415/Rev.1.

7/ Annex III.

After the closure of the eighteenth session of the Assembly, the Mexican Ministry of Foreign Affairs initiated active consultations with the Ministries of Foreign Affairs of the other Latin American republics on the measures likely to be most effective for carrying out the recommendations of resolution 1911 (XVIII).

The outcome of these consultations was the Preliminary Meeting on the Denuclearization of Latin America, which took place in Mexico from 23 to 27 November 1964. At this meeting two basic resolutions were adopted: the first defined the term "denuclearisation", specifying that it should mean solely "the absence of nuclear weapons" and not the prohibition of the peaceful use of the atom, which should, on the contrary, be encouraged, especially for the benefit of the developing countries; the second established the Preparatory Commission for the Denuclearization of Latin America and instructed the Commission to prepare a draft treaty on the subject. The Final Act of the Meeting was reproduced and issued as a United Nations document.8/

Four months later, the Preparatory Commission held its first session, at which observers from other continents, namely, from the Netherlands and Yugoslavia, were present for the first time. During this session, the Commission adopted its rules of procedure, based on those of the General Assembly of the United Nations, and set up a Co-ordinating Committee and three Working Groups, designated by the first three letters of the alphabet, each with clearly defined and urgent tasks to carry out. The corresponding Final Act was reproduced and distributed as a United Nations document.9/

The three Working Groups worked hard in the interval between the first and second sessions, and when the latter was opened on 23 August 1965, the Commission had before it their respective reports. One of these, that of Working Group B, included a preliminary draft of articles on verification, inspection and control, prepared with the aid of a very full digest of all the available material on the subject supplied by the Secretary-General of the United Nations, and with the technical advice of Mr. William Epstein, Chief of the Disarmament Affairs Division of the same Organization, who from then on was fortunately able to attend all the Commission's meetings.

8/ A/5824.

9/ A/5912.

Besides considering and communicating this preliminary draft to the Governments and approving a general declaration of principles, later to become, with slight modifications, the Preamble to the Treaty, the Commission at its second session established a Negotiating Committee with the main task of obtaining from the nuclear Powers a commitment to respect the legal statute of the military denuclearization of Latin America, as it would be embodied in the said international treaty. The Final Act of this session was reproduced and distributed as a United Nations document.10/

The second and third sessions of the Preparatory Commission were separated by a longer interval than any other successive meetings of the Commission. But the seven-and-a-half months that passed before the Commission sat again were far from being wasted. For a considerable part of that time, either the Negotiating Committee or the Co-ordinating Committee was hard at work. The former submitted to the Commission a full report on the results of the negotiations it had held with the representatives of the nuclear States while the twentieth session of the General Assembly of the United Nations was in progress. The efforts of the latter produced a substantial working document in the form of a preliminary draft treaty which gave the Commission for the first time a text presenting a general picture of the problems with which it would be faced in preparing the denuclearization treaty.

This working document - elaborated on the basis of three documents: the preliminary draft of the articles on verification, inspection and control, prepared the year before by Working Group B; a preliminary draft treaty submitted by the Government of Mexico; and some observations communicated by the Government of Chile - together with the draft treaty submitted jointly, shortly after the session began by the delegations of Brazil and Colombia, served as background material for the unanimous adoption of the "Proposals for the Preparation of the Treaty on the Denuclearization of Latin America", of which it was rightly said at the time that they would have, as an immediate antecedent to the treaty, a title to fame even more outstanding than that of the Dumbarton Oaks proposals in relation to the San Francisco Charter. The Final Act of the third session of the Preparatory Commission was reproduced and distributed as a United Nations document.11/

10/ A/5985
11/ A/6328

At the fourth session, the number of observers from States belonging to four different continents was greater than that of the twenty-one members of the Commission (the session was attended by observers from Austria, Belgium, Canada, Denmark, the United States, Finland, France, Ghana, the United Kingdom, India, Israel, Italy, Japan, Norway, the Netherlands, Poland, the United Arab Republic, the Republic of China, the Federal Republic of Germany, Romania, Sweden and Yugoslavia). The session was divided in two parts, the first considering only the motion submitted by various delegations for the postponement of the discussions. At the only meeting of this first part, which took place on 30 August 1966, the Commission received the Second Report of the Negotiating Committee, giving an account of the result of the informal inquiries that the Committee had been requested to make with a view to entering into contact with the Government of the People's Republic of China. The most important paragraphs of this report were read by the representative of Mexico at the meeting of the First Committee of the General Assembly held on 9 November 1966.[12/] The second part of the session, from 31 January to 14 February 1967, culminated in the adoption and opening for signature of the Treaty for the Prohibition of Nuclear Weapons in Latin America.

At the end of 1966, the Co-ordinating Committee of the Commission, on the basis of the results of informal conversations entered into while the twenty-first session of the General Assembly of the United Nations was in progress, drew up in New York a series of practical suggestions, embodied in its report of 28 December 1966, for the solution of the problems that had remained outstanding after the third session, most important among which was the question of the entry into force of the future treaty, dealt with in article 23 of the Proposals mentioned above.

The Committee, moreover, showing a clear appreciation of the situation, stressed in its report that the second part of the fourth session, to be opened on 31 January 1967, appeared to offer Latin America its last chance of being the first to give the world the example of the conclusion of a treaty of the type that had been in preparation during the previous three years, and recommended that the Commission, rather than lose this last chance, should sit until it could complete and open for signature the Treaty for the Denuclearization of Latin America.

12/ A/C.1/PV.1447

The Preparatory Commission took the recommendations of its Co-ordinating Committee very seriously. At the same meeting at which the second part of its fourth session was opened, it decided to omit the general debate and set up two working groups whose intensive and uninterrupted labours enabled it to complete the text of the treaty, which was adopted unanimously on 12 February and opened for signature two days later at the Commission's closing meeting. The Final Act of this fourth and last session of the Preparatory Commission was reproduced and distributed as a United Nations document.13/

During the first part of its twenty-second session, the General Assembly of the United Nations adopted, without a single contrary vote, resolution 2286 (XXII)14/, in which, besides welcoming with special satisfaction "the Treaty for the Prohibition of Nuclear Weapons in Latin America" - which title was also given to the resolution - and stating that the Treaty "constitutes an event of historic significance in the efforts to prevent the proliferation of nuclear weapons and to promote international peace and security", it made a series of urgent appeals addressed respectively to all States, to States which are or may become signatories of the Treaty or of its Additional Protocol I, and to Powers possessing nuclear weapons:

It called upon the first "to give their full co-operation to ensure that the régime laid down in the Treaty enjoys the universal observance to which its lofty principles and noble aims entitled it".

It recommended the second "to strive to take all the measures within their power to ensure that the Treaty speedily obtains the widest possible application".

It invited the Powers possessing nuclear weapons "to sign and ratify Additional Protocol II of the Treaty as soon as possible".

13/ A/6663. The authentic text of the Treaty, in the five official languages of the United Nations, is reproduced in document A/C.1/946.

For a fuller account of the preparatory work for the Treaty, see:
Alfonso García Robles, The Denuclearization of Latin America,
Carnegie Endowment for International Peace, New York, 1967;
El Tratado de Tlatelolco: Génesis, Alcance y Propósitos de la Proscripción de las Armas Nucleares en la América Latina, El Colegio de México, 1967.

14/ Annex IV.

The Conference of Non-Nuclear-Weapon States, held at Geneva from 29 August to 28 September 1968 adopted, also without a single dissenting vote, resolution B[15], whose operative part contains general provisions as well as provisions relating specifically to the Treaty of Tlatelolco.

In the general provisions of that resolution, the Conference recommended that all non-nuclear-weapon States not comprised in the zone established by the Treaty of Tlatelolco should "initiate or continue such studies as they may deem opportune concerning the possibility and desirability of establishing by treaty the military denuclearization of their respective zones, provided that political and security conditions permit."

In those paragraphs of the resolution referring to the Treaty, the Conference, after regretting the fact that not all the nuclear-weapon States had yet signed Additional Protocol II of the Treaty of Tlatelolco, urged the nuclear-weapon Powers "to comply fully with paragraph 4 of resolution 2286 (XXII), adopted by the United Nations General Assembly on 5 December 1967", namely, the paragraph in which, as already indicated, the General Assembly had invited those Powers "to sign and ratify as soon as possible Additional Protocol II of the Treaty."

The General Assembly reverted to this question at its twenty-third session and, in its resolution 2456 B (XXIII)[16], which was approved, as in the two previous cases, without a single dissenting vote, on 20 December 1968, reiterated the general recommendation contained in resolution B of the Conference of Non-Nuclear-Weapon States "and especially the urgent appeal for full compliance by the nuclear-weapon Powers with paragraph 4 of General Assembly resolution 2286 (XXII) of 5 December 1967, in which the Assembly invited Powers possessing nuclear weapons to sign and ratify as soon as possible Additional Protocol II of the Treaty for the Prohibition of Nuclear Weapons in Latin America."

By 20 March 1969, the Treaty of Tlatelolco had been signed by the twenty-one States members of the Preparatory Commission for the Denuclearization of Latin America and by Barbados. Ten of these States - in chronological order, Mexico, El Salvador, the Dominican Republic, Uruguay, Honduras, Nicaragua, Equador, Bolivia, Peru and Paraguay - had deposited their instruments of ratification together with declarations by which, by virtue of the provisions of article 28, paragraph 2 of the Treaty, they wholly waived the requirements laid down in article 28, paragraph 1, so that the Treaty is already in force for these ten States. Brazil has also deposited its instrument of ratification but has not made the declaration in question (annex IX).

15/ Annex V

16/ Annex VI

Ratification procedure is well advanced in most of the other signatory States, so that there is reason to hope that in the near future the required eleven instruments of ratification accompanied by declarations waiving all requirements will have been deposited so that immediate steps can be taken to enable the agency for the Prohibition of Nuclear Weapons in Latin America to begin work in accordance with article 28 (3) of the Treaty.

With regard to the additional protocols to the Treaty, the one bearing the number I was signed by the United Kingdom on 20 December 1967 and by the Netherlands on 15 March 1968. Additional Protocol II was signed by the United Kingdom on the same date as Protocol I and by the United States on 1 April 1968. (Annex IX).

II. - Obligations under the Treaty of Tlatelolco, of the States Parties thereto and of States possessing nuclear weapons

As was said at the beginning, the intention here is not to examine in detail the contents of the Treaty for the Prohibition of Nuclear Weapons in Latin America and its two additional protocols, but only briefly to analyse those provisions of the Treaty and of its Additional Protocol II which relate to the obligations assumed, first, by the non-nuclear weapon States which become parties to the Treaty, and, second, by the States possessing nuclear weapons which sign and ratify Additional Protocol II.

As regards the obligations of the States Parties to the Treaty, the Latin American States have drawn up a definition which is undoubtedly one of the most comprehensive ever produced on the world or regional level, and one which certainly seems to leave no loop-hole.

Under article 1 of the Treaty,[17/] the Contracting Parties undertake to "use exclusively for peaceful purposes the nuclear material and facilities which are under their jurisdiction and to prohibit and prevent in their respective territories" both "the testing, use, manufacture, production or acquisition by any means whatsoever of any nuclear weapons" and "the receipt, storage, installation, deployment and any form of possession of any nuclear weapons", by the Parties themselves, directly or indirectly, on behalf of anyone else, by anyone on their behalf or in any other way.

The Parties also undertake "to refrain from engaging in, encouraging or authorizing, directly or indirectly, or in any way participating in the testing, use, manufacture, production, possession or control of any nuclear weapon".

17/ Annex VII

With the aim of facilitating, ensuring and verifying compliance with the obligations contracted by the Parties, the Treaty contains in article 5 an objective definition of what, for the purposes of the Treaty, is to be understood by "nuclear weapon"[18]; it sets up an "Agency for the Prohibition of Nuclear Weapons in Latin America" the principal organs of which will be a General Conference, a Council and a Secretariat; it also sets up a Control System, which is described in articles 12 to 16 and 18, paragraphs 2 and 3.[19]

The provisions of the last-mentioned articles, as the Secretary-General of the United Nations strongly emphasized in the message which he sent to the Preparatory Commission when the Treaty was approved, on 12 February 1967, provide the first example of the inclusion in any international treaty dealing with disarmament measures of an effective control system with permanent organs of supervision. The system includes the full application of the safeguards of the International Atomic Energy Agency, but its scope is much greater. On the one hand, it is to be used not only to verify "that devices, services and facilities intended for peaceful uses of nuclear energy are not used in the testing or manufacture of nuclear weapons", but also to prevent any of the activities prohibited in article 1 of the treaty from being carried out in the territory of the Contracting Parties with nuclear materials or weapons introduced from abroad, and to make sure that any explosions for peaceful purposes that might be carried out are compatible with article 18 of the Treaty. On the other hand, the Treaty assigns important functions of control to the three main organs - established by the Treaty itself - of the Agency for the Prohibition of Nuclear Weapons in Latin America: they are the General Conference, the Council and the Secretariat. There is also provision for the submission by the Parties of periodic and special reports, for special inspections in certain circumstances, and for the transmission of the reports on those inspections to the Security Council and the General Assembly of the United Nations.

As regards the obligations of States possessing nuclear weapons, these are set out in Additional Protocol II to the Treaty[20], which is open to signature only by those States and in which it is stipulated that the nuclear Powers which become Parties to the Treaty shall enter into the following undertakings:

18/ Ibid.

19/ Ibid.

20/ Annex VIII.

(a) that of respecting, "in all its express aims and provisions," the "statute of denuclearization of Latin America in respect of warlike purposes, as defined, delimited and set forth" in the provisions of the Treaty of Tlatelolco;

(b) that of not contributing "in any way to the performance of acts involving a violation of the obligations of article 1 of the Treaty in the territories to which the Treaty applies", and

(c) that of not using or threatening to use "nuclear weapons against the Contracting Parties of the Treaty".

The above undertakings, which signature and ratification of Additional Protocol II to the Treaty of Tlatelolco will make binding on the nuclear Powers, are in strict accordance with both the letter and the spirit of the exhortations of the United Nations General Assembly, repeated in many resolutions: especially worth recalling here are the provisions of resolution 1911 (XVIII), in which the Assembly expressed its trust that the nuclear Powers would "lend their full co-operation" for the effective realization of the military denuclearization of Latin America; and also of resolution 2153 A (XXI), in which it called upon "all nuclear-weapon Powers to refrain from the use, or the threat of use, of nuclear weapons against States may conclude treaties", such as the Treaty of Tlatelolco in order to "ensure the total absence of nuclear weapons in their respective territories".

This was certainly the reason why the Assembly, as has already been said, expressly invited the Powers in question, in its resolution 2286 (XXII), to "sign and ratify Additional Protocol II of the Treaty [of Tlatelolco] as soon as possible"; this was why the Conference of Non-Nuclear-Weapon States placed special emphasis on the need for the nuclear Powers to "comply fully" with that invitation and why the Assembly itself reaffirmed the recommendation of the Conference in its resolution 2456 B (XXIII).

III. Conclusions

The brief account in part I of this document of the efforts to secure the conversion into nuclear-free zones of the African continent and the Latin American subcontinent, and the analytical description in part II of some aspects of the Treaty of Tlatelolco suggest certain conclusions, of which those set forth below may be of particular use to the Eighteen-Nation Disarmament Committee:

1. The two initiatives, which originated at almost the same time, followed a parallel development until 1965. From then on the Latin American project gained a considerable lead, reaching a happy culmination in the opening for signature of the Treaty of Tlatelolco at the beginning of 1967; this was probably due to the felicitous decision taken by the Latin American States in November 1964 to set up an ad hoc agency - the Preparatory Commission for the Denuclearization of Latin America - with the exclusive task of drawing up the required draft treaty. The Commission started its work on 5 March 1965 and, after overcoming numerous obstacles and resolving the complex problems with which it was faced, managed to finish its work in rather less than two years of persistent efforts.

2. The background supplied by the four resolutions of the United Nations General Assembly appended as Annexes I-IV, two each of which refer to the banning of nuclear weapons in Africa and Latin America respectively, clearly shows that in both cases there was a conviction that in order to establish a nuclear-free zone, a multilateral declaration, or even a United Nations declaration, would not be sufficient, but that a properly signed and ratified treaty or convention was required. Such was the feeling of the Latin American States when in November 1963 they put before the Assembly the draft which was to become resolution 1911 (XVIII); and such also was the feeling of the Heads of State and Government of the Organization of African Unity when they adopted their Declaration of July 1964.

3. The provisions of the Treaty of Tlatelolco are very instructive in regard to the many and various considerations which will have to be taken into account when any future nuclear-free zones are established. Of these, the following are worth singling out:

(a) the need for the obligations to be assumed by States Parties to the treaty in question to be drawn up in such a way as to leave no loop-hole for evasion of the total nuclear-weapons ban in their respective territories;

(b) the desirability of including in the treaty an objective definition of what, for the purposes of the treaty, is meant by "nuclear weapon";

(c) the need for providing for the application of an effective system of international verification and control for the purposes of watching over and ensuring fulfilment of the treaty obligations; and

(d) the desirability of setting up, for that same purpose, an agency - with organs adequate for the fulfilment of its tasks - in which all Parties to the treaty are represented.

4. Additional Protocol II to the Treaty of Tlatelolco is a clear indication that, like the obligations upon non-nuclear States, the undertakings which the nuclear Powers should assume in respect of militarily denuclearized zones must be incorporated in a solemn international instrument which has the full force of law, like a treaty, convention, or protocol. It was this conviction which, during the debates in the Preparatory Commission for the Denuclearization of Latin America, prompted the member States of the Commission, after a long and exhaustive discussion of the subject, to reject recourse to any of the various procedures which, in addition to the one which was later to be embodied in the Protocol, were at the time considered, such as the drawing up of unilateral declarations, or the adoption by the General Assembly of a resolution sui generis. The conclusion reached, furthermore, seems to be the only one which accords with the basic principle of the sovereign equality of States, since it would be in conflict with this principle if procedures which are rightly held to be inadequate in the case of non-nuclear States were accepted as satisfactory where nuclear Powers are concerned. This is certainly why the Conference of Non-Nuclear-Weapon-States clearly expressed its conviction that "for the maximum effectiveness of any treaty establishing a nuclear-weapon-free zone, the co-operation of the nuclear-weapon States is necessary and that such co-operation should take the form of commitments likewise undertaken in a formal international instrument which is legally binding, such as a treaty, convention or protocol".

ANNEX I

1652 (XVI). Consideration of Africa as a denuclearized zone.

The General Assembly,

Recalling its resolutions 1378 (XIV) of 20 November 1959 on general and complete disarmament, 1379 (XIV) of 20 November 1959 on the question of French nuclear tests in the Sahara, 1576 (XV) of 20 December 1960 on the prevention of the wider dissemination of nuclear weapons, and 1577 (XV) and 1578 (XV) of 20 December 1960 on the suspension of nuclear and thermo-nuclear tests,

Recalling further its resolution 1629 (XVI) of 27 October 1961, which declared that both concern for the future of mankind and the fundamental principles of international law impose a responsibility on all States concerning actions which might have harmful biological consequences for the existing and future generations of peoples of other States, by increasing the levels of radioactive fall-out,

Concerned about the present rate of nuclear armament and the possible spread of nuclear weapons, as well as the resumption of nuclear tests in the continent of Africa which is being emancipated,

Recognizing the need to prevent Africa from becoming involved in any competition associated with the ideological struggles between the Powers engaged in the arms race and, particularly, with nuclear weapons,

Recognizing further that the task of economic and social development in the African States requires the uninterrupted attention of those States in order to allow them to fulfil their goals and to contribute fully to the maintenance of international peace and security,

Calls upon Member States:

(a) To refrain from carrying out or continuing to carry out in Africa nuclear tests in any form;

(b) To refrain from using the territory, territorial waters or air space of Africa for testing, storing or transporting nuclear weapons;

(c) To consider and respect the continent of Africa as a denuclearized zone.

1063rd plenary meeting,
24 November 1961

ANNEX II

2033 (XX). Declaration on the denuclearization of Africa.

The General Assembly,

Believing in the vital necessity of saving contemporary and future generations from the scourge of a nuclear war,

Recalling its resolution 1652 (XVI) of 24 November 1961, which called upon all Member States to refrain from testing, storing or transporting nuclear weapons in Africa and to consider and respect the continent as a denuclearized zone,

Recalling its resolution 2028 (XX) of 19 November 1965 on the non-proliferation of nuclear weapons,

Observing that proposals for the establishment of denuclearized zones in various other areas of the world have also met with general approval,

Convinced that the denuclearization of various areas of the world would help to achieve the desired goal of prohibiting the use of nuclear weapons,

Considering that the Assembly of Heads of State and Government of the Organization of African Unity, at its first regular session, held at Cairo from 17 to 21 July 1964, issued a solemn declaration on the denuclearization of Africa in which the Heads of State and Government announced their readiness to undertake, in an international treaty to be concluded under the auspices of the United Nations, not to manufacture or acquire control of nuclear weapons,

Noting that this declaration on the denuclearization of Africa was endorsed by the Heads of State or Government of Non-Aligned Countries in the Declaration issued on 10 October 1964, at the close of their Second Conference, held at Cairo,

Recognizing that the denuclearization of Africa would be a practical step towards the prevention of the further spread of nuclear weapons in the world and towards the achievement of general and complete disarmament and of the objectives of the United Nations,

1. Reaffirms its call upon all States to respect the continent of Africa as a nuclear-free zone;

2. Endorses the declaration on the denuclearization of Africa issued by the Heads of State and Governments of African countries;

3. Calls upon all States to respect and abide by the aforementioned declaration;

4. Calls upon all States to refrain from the use or the threat of use, of nuclear weapons on the African continent;

5. Calls upon all States to refrain from testing, manufacturing, using or deploying nuclear weapons on the continent of Africa, and from acquiring such weapons or taking any action which would compel African States to take similar action;

6. Urges those States possessing nuclear weapons and capability not to transfer nuclear weapons, scientific data or technological assistance to the national control of any State, either directly or indirectly, in any form which may be used to assist such States in the manufacture or use of nuclear weapons in Africa;

7. Expresses the hope that the African States will initiate studies, as they deem appropriate, with a view to implementing the denuclearization of Africa, and take the necessary measures through the Organization of African Unity to achieve this end;

8. Urges the African States to keep the United Nations informed of any further developments in this regard;

9. Requests the Secretary-General to extend to the Organization of African Unity such facilities and assistance as may be requested in order to achieve the aims of the present resolution.

1388th plenary meeting,
3 December 1965.

ANNEX III

1911 (XVIII). Denuclearization of Latin America.

The General Assembly,

Bearing in mind the vital necessity of sparing present and future generations the scourge of a nuclear war,

Recalling its resolutions 1380 (XIV) of 20 November 1959, 1576 (XV) of 20 December 1960 and 1665 (XVI) of 4 December 1961, in which it recognized the danger that an increase in the number of States possessing nuclear weapons would involve, since such an increase would necessarily result in an intensification of the arms race and an aggravation of the difficulty of maintaining world peace, thus rendering more difficult the attainment of a general disarmament agreement,

Observing that in its resolution 1664 (XVI) of 4 December 1961 it stated explicitly that the countries not possessing nuclear weapons had a grave interest and an important part to fulfil in the preparation and implementation of measures that could halt further nuclear weapon tests and prevent the further spread of nuclear weapons,

Considering that the recent conclusion of the Treaty banning nuclear weapon tests in the atmosphere, in outer space and under water, signed on 5 August 1963, has created a favourable atmosphere for parallel progress towards the prevention of the further spread of nuclear weapons, a problem which, as indicated in General Assembly resolutions 1649 (XVI) of 8 November 1961 and 1762 (XVII) of 6 November 1962, is closely connected with that of the banning of nuclear weapon tests,

Considering that the Heads of State of five Latin American Republics issued, on 29 April 1963, a declaration on the denuclearization of Latin America in which, in the name of their peoples and Governments, they announced that they are prepared to sign a multilateral Latin American agreement whereby their countries would undertake not to manufacture, receive, store or test nuclear weapons or nuclear launching devices,

Recognizing the need to preserve, in Latin America, conditions which will prevent the countries of the region from becoming involved in a dangerous and ruinous nuclear arms race,

1. Notes with satisfaction the initiative for the denuclearization of Latin America taken in the joint declaration of 29 April 1963;

2. Expresses the hope that the States of Latin America will initiate studies, as they deem appropriate, in the light of the principles of the Charter of the United Nations and of regional agreements and by the means and through the channels which they deem suitable, concerning the measures that should be agreed upon with a view to achieving the aims of the said declaration;

3. Trusts that at the appropriate moment, after a satisfactory agreement has been reached, all States, particularly the nuclear Powers, will lend their full co-operation for the effective realization of the peaceful aims inspiring the present resolution;

4. Requests the Secretary-General to extend to the States of Latin America, at their request, such technical facilities as they may require in order to achieve the aims set forth in the present resolution.

1265th plenary meeting,
27th November 1963.

ANNEX IV

2286 (XXII). Treaty for the Prohibition of Nuclear Weapons in Latin America

The General Assembly,

Recalling that in its resolution 1911 (XVIII) of 27 November 1963 it expressed the hope that the States of Latin America would carry out studies and take appropriate measures to conclude a treaty that would prohibit nuclear weapons in Latin America,

Recalling also that in the same resolution it voiced its confidence that, once such a treaty was concluded, all States and particularly the nuclear Powers, would lend it their full co-operation for the effective realization of its peaceful aims,

Considering that in its resolution 2028 (XX) of 19 November 1965 it established the principle of an acceptable balance of mutual responsibilities and obligations of the nuclear and non-nuclear Powers,

Bearing in mind that in its resolution 2153 A (XXI) of 17 November 1966 it expressly called upon all nuclear-weapon Powers to refrain from the use, or the threat of use, of nuclear weapons against States which might conclude regional treaties in order to ensure the total absence of nuclear weapons in their respective territories,

Noting that that is precisely the object of the Treaty for the Prohibition of Nuclear Weapons in Latin America, signed at Tlatelolco, Mexico, by twenty-one Latin American States, which are convinced that the Treaty will constitute a measure that will spare their peoples the squandering of their limited resources on nuclear armaments and will protect them against possible nuclear attacks on their territories, that it will be a stimulus to the peaceful use of nuclear energy in the promotion of economic and social development and that it will act as a significant contribution towards preventing the proliferation of nuclear weapons and as a powerful factor for general and complete disarmament,

Noting that it is the intent of the signatory States that all existing States within the zone defined in the Treaty may become parties to the Treaty without any restriction,

Taking note of the fact that the Treaty contains two additional protocols open, respectively, to the signature of States which, de jure or de facto, are internationally responsible for territories which lie within the limits of the geographical zone established in the Treaty and to the signature of States possessing nuclear weapons, and convinced that the co-operation of such States is necessary for the greater effectiveness of the Treaty,

1. Welcomes with special satisfaction the Treaty for the Prohibition of Nuclear Weapons in Latin America, which constitutes an event of historic significance in the efforts to prevent the proliferation of nuclear weapons and to promote international peace and security and which at the same time establishes the right of Latin American countries to use nuclear energy for demonstrated peaceful purposes in order to accelerate the economic and social development of their peoples;

2. Calls upon all States to give their full co-operation to ensure that the régime laid down in the Treaty enjoys the universal observance to which its lofty principles and noble aims entitle it;

3. Recommends States which are or may become signatories of the Treaty and those contemplated in Additional Protocol I of the Treaty to strive to take all the measures within their power to ensure that the Treaty speedily obtains the widest possible application among them;

4. Invites Powers possessing nuclear weapons to sign and ratify Additional Protocol II of the Treaty as soon as possible.

1620th plenary meeting,
5 December 1967

Resolution B Relating to the Establishment of Nuclear-Weapon-Free Zones, adopted by the Conference of Non-Nuclear-Weapon States

The Conference of Non-Nuclear-Weapon States,

Considering that the establishment of nuclear-weapon-free zones, on the initiative of the States situated within each zone concerned, is one of the measures which can contribute most effectively to halting the proliferation of those instruments of mass destruction and to promoting progress towards nuclear disarmament,

Noting that a nuclear-weapon-free zone is of benefit to the security and economic development of the States within the zone, since it frees their territories from the danger of nuclear attacks and avoids the squandering of their resources on the production of nuclear armaments,

Taking into account the conclusions which follow from resolutions 1911 (XVIII) and 2033 (XX) of the United Nations General Assembly,

Recalling that General Assembly resolution 2028 (XX) established the principle of an acceptable balance of mutual responsibilities and obligations of the nuclear-weapon and non-nuclear-weapon States,

Recalling further that in resolution 2153 A (XXI) the General Assembly expressly called upon all nuclear-weapon Powers to refrain from the use, or the threat of use, of nuclear weapons against States which might conclude regional treaties in order to ensure the total absence of nuclear weapons in their respective territories,

Convinced that, for the maximum effectiveness of any treaty establishing a nuclear-weapon-free zone, the co-operation of the nuclear-weapon States is necessary and that such co-operation should take the form of commitments likewise undertaken in a formal international instrument which is legally binding, such as a treaty, convention or protocol,

Observing that the Treaty for the Prohibition of Nuclear Weapons in Latin America, also known as the Treaty of Tlatelolco, has already established a nuclear-weapon-free zone comprising territories densely populated by man,

Noting that Additional Protocol II of that Treaty defines the following obligations to be assumed by the nuclear-weapon States:

(a) To respect "in all its express aims and provisions" the "statute of denuclearization of Latin America in respect of warlike purposes, as defined, delimited and set forth" in the Treaty of Tlatelolco;

(b) "not to contribute in any way to the performance of acts involving a violation of the obligations of article 1 of the Treaty in the territories to which the Treaty applies",

(c) "not to use or threaten to use nuclear weapons against the Contracting Parties of the Treaty",

Recalling that in resolution 2286 (XXII) the General Assembly invited Powers possessing nuclear weapons "to sign and ratify Additional Protocol II of the Treaty as soon as possible",

I.

Recommends that all non-nuclear-weapon States not comprised in the zone established by the Treaty of Tlatelolco initiate or continue such studies as they may deem opportune concerning the possibility and desirability of establishing by treaty the military denuclearization of their respective zones, provided that political and security conditions permit.

II.

1. Regrets the fact that not all the nuclear-weapon States have yet signed Additional Protocol II of the Treaty of Tlatelolco;

2. Urges the nuclear-weapon Powers to comply fully with paragraph 4 of resolution 2286 (XXII), adopted by the United Nations General Assembly on 5 December 1967.

27 September 1968

Annex VI

2456 B (XXIII). Conference of Non-Nuclear-Weapon States

The General Assembly,

Having examined the Final Document of the Conference of Non-Nuclear-Weapon States,

Considering that the establishment of zones free from nuclear weapons, on the initiative of the States situated within each zone concerned, is one of the measures which can contribute most effectively to halting the proliferation of those instruments of mass destruction and to promoting progress towards nuclear disarmament,

Observing that the Treaty for the Prohibition of Nuclear Weapons in Latin America, opened for signature on 14 February 1967, has already established a nuclear-weapon-free zone comprising territories densely populated by man,

Reiterates the recommendation contained in resolution B of the Conference of Non-Nuclear-Weapon States, concerning the establishment of nuclear-weapon-free zones, and especially the urgent appeal for full compliance by the nuclear-weapon Powers with paragraph 4 of General Assembly resolution 2286 (XXII) of 5 December 1967, in which the Assembly invited Powers possessing nuclear weapons to sign and ratify as soon as possible Additional Protocol II of the Treaty for the Prohibition of Nuclear Weapons in Latin America.

1750th plenary meeting,
20 December 1968.

ANNEX VII

ARTICLES OF THE TREATY FOR THE PROHIBITION OF NUCLEAR WEAPONS IN LATIN AMERICA (TREATY OF TLATELOLCO) CONCERNING OBLIGATIONS, DEFINITION OF NUCLEAR WEAPONS, ORGANIZATION AND CONTROL SYSTEM */

Obligations

Article 1

1. The Contracting Parties hereby undertake to use exclusively for peaceful purposes the nuclear material and facilities which are under their jurisdiction, and to prohibit and prevent in their respective territories:

(a) The testing, use, manufacture, production or acquisition by any means whatsoever of any nuclear weapons, by the Parties themselves, directly or indirectly, on behalf of anyone else or in any other way, and

(b) The receipt, storage, installation, deployment and any form of possession of any nuclear weapons, directly or indirectly, by the Parties themselves, by anyone on their behalf or in any other way.

2. The Contracting Parties also undertake to refrain from engaging in, encouraging or authorizing, directly or indirectly, or in any way participating in the testing, use, manufacture, production, possession or control of any nuclear weapon.

* * * * *

Definition of nuclear weapons

Article 5

For the purposes of this Treaty, a nuclear weapon is any device which is capable of releasing nuclear energy in an uncontrolled manner and which has a group of characteristics that are appropriate for use for warlike purposes. An instrument that may be used for the transport or propulsion of the device is not included in this definition if it is separable from the device and not an indivisible part thereof.

* * * * *

Organization

Article 7

1. In order to ensure compliance with the obligations of this Treaty, the Contracting Parties hereby establish an international organization to be known as the "Agency for the Prohibition of Nuclear Weapons in Latin America", hereinafter referred to as "the Agency". Only the Contracting Parties shall be affected by its decisions.

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*/ A/C.1/946

2. The Agency shall be responsible for the holding of periodic or extraordinary consultations among Member States on matters relating to the purposes, measures and procedures set forth in this Treaty and to the supervision of compliance with the obligations arising therefrom.

3. The Contracting Parties agree to extend to the Agency full and prompt co-operation in accordance with the provisions of this Treaty, of any agreements they may conclude with the Agency and of any agreements the Agency may conclude with any other international organization or body.

4. The headquarters of the Agency shall be in Mexico City.

Organs

Article 8

1. There are hereby established as principal organs of the Agency a General Conference, a Council and a Secretariat.

2. Such subsidiary organs as are considered necessary by the General Conference may be established within the purview of this Treaty.

* * * * *

Control system

Article 12

1. For the purpose of verifying compliance with the obligations entered into by the Contracting Parties in accordance with article 1, a control system shall be established which shall be put into effect in accordance with the provisions of articles 13 - 18 of this Treaty.

2. The control system shall be used in particular for the purpose of verifying:

(a) That devices, services and facilities intended for peaceful uses of nuclear energy are not used in the testing or manufacture of nuclear weapons;

(b) That none of the activities prohibited in article 1 of this Treaty are carried out in the territory of the Contracting Parties with nuclear materials or weapons introduced from abroad; and

(c) That explosions for peaceful purposes are compatible with article 18 of this Treaty.

IAEA safeguards

Article 13

Each Contracting Party shall negotiate multilateral or bilateral agreements with the International Atomic Energy Agency for the application of its safeguards to its

nuclear activities. Each Contracting Party shall initiate negotiations within a period of 180 days after the date of the deposit of its instrument of ratification of this Treaty. These agreements shall enter into force, for each Party, not later than eighteen months after the date of the initiation of such negotiations except in case of unforeseen circumstances or force majeure.

Reports of the Parties

Article 14

1. The contracting Parties shall submit to the Agency and to the International Atomic Energy Agency, for their information, semi-annual reports stating that no activity prohibited under this Treaty has occurred in their respective territories.

2. The Contracting Parties shall simultaneously transmit to the Agency a copy of any report they may submit to the International Atomic Energy Agency which relates to matters that are the subject of this Treaty and to the application of safeguards.

3. The Contracting Parties shall also transmit to the Organization of American States, for its information, any reports that may be of interest to it, in accordance with the obligations established by the Inter-American System.

Special reports requested by the General Secretary

Article 15

1. With the authorization of the Council, the General Secretary may request any of the Contracting Parties to provide the Agency with complementary or supplementary information regarding any event or circumstance connected with compliance with this Treaty, explaining his reasons. The Contracting Parties undertake to co-operate promptly and fully with the General Secretary.

2. The General Secretary shall inform the Council and the Contracting Parties forthwith of such requests and of the respective replies.

Special inspections

Article 16

1. The International Atomic Energy Agency and the Council established by this Treaty have the power of carrying out special inspections in the following cases:

(a) In the case of the International Atomic Energy Agency, in accordance with the agreements referred to in article 13 of this Treaty;

(b) In the case of the Council:

(i) When so requested, the reasons for the request being stated, by any Party which suspects that some activity prohibited by this Treaty has been carried out or is about to be carried out, either in the territory of any other Party or in any other place on such latter Party's behalf, the Council shall immediately arrange for such an inspection in accordance with article 10, paragraph 5;

(ii) When requested by any Party which has been suspected of or charged with having violated this Treaty, the Council shall immediately arrange for the special inspection requested in accordance with article 10, paragraph 5.

The above requests will be made to the Council through the General Secretary.

2. The costs and expenses of any special inspection carried out under paragraph 1, sub-paragraph (b), sections (i) and (ii), of this article shall be borne by the requesting Party or Parties, except where the Council concludes on the basis of the report on the special inspection that, in view of the circumstances existing in the case, such costs and expenses should be borne by the Agency.

3. The General Conference shall formulate the procedures for the organization and execution of the special inspection carried out in accordance with paragraph 1, sub-paragraph (b), sections (i) and (ii), of this article.

4. The Contracting Parties undertake to grant the inspectors carrying out such special inspections full and free access to all places and all information which may be necessary for the performance of their duties and which are directly and intimately connected with the suspicion of violation of this Treaty. If so requested by the authorities of the Contracting Party in whose territory the inspection is

carried out, the inspectors designated by the General Conference shall be accompanied by representatives of said authorities, provided that this does not in any way delay or hinder the work of the inspectors.

5. The Council shall immediately transmit to all the Parties, through the General Secretary, a copy of any report resulting from special inspections.

6. Similarly, the Council shall send through the General Secretary to the Secretary-General of the United Nations, for transmission to the United Nations Security Council and General Assembly, and to the Council of the Organization of American States, for its information a copy of any report resulting from any special inspection carried out in accordance with paragraph 1, sub-paragraph (b), sections (i) and (ii), of this article.

7. The Council may decide, or any Contracting Party may request, the convening of a special session of the General Conference for the purpose of considering the reports resulting from any special inspection. In such a case, the General Secretary shall take immediate steps to convene the special session requested.

8. The General Conference, convened in special session under this article, may make recommendations to the Contracting Parties and submit reports to the Secretary-General of the United Nations to be transmitted to the United Nations Security Council and the General Assembly.

* * * * * *

Explosions for peaceful purposes

Article 18

1. The Contracting Parties may carry out explosions of nuclear devices for peaceful purposes - including explosions which involve devices similar to those used in nuclear weapons - or collaborate with third parties for the same purpose, provided that they do so in accordance with the provisions of this article and the other articles of the Treaty, particularly articles 1 and 5.

2. Contracting Parties intending to carry out, or to co-operate in carrying out, such an explosion shall notify the Agency and the International Atomic Energy Agency, as far in advance as the circumstances require, of the date of the explosion and shall at the same time provide the following information:

(a) The nature of the nuclear device and the source from which it was obtained,

(b) The place and purpose of the planned explosion,

(c) The procedures which will be followed in order to comply with paragraph 3 of this article,

(d) The expected force of the device, and

(e) The fullest possible information on any possible radioactive fall-out that may result from the explosion or explosions, and measures which will be taken to avoid danger to the population, flora, fauna and territories of any other Party or Parties.

3. The General Secretary and the technical personnel designated by the Council and the International Atomic Energy Agency may observe all the preparations, including the explosion of the device, and shall have unrestricted access to any area in the vicinity of the site of the explosion in order to ascertain whether the device and the procedures followed during the explosion are in conformity with the information supplied under paragraph 2 of this article and the other provisions of this Treaty.

4. The Contracting Parties may accept the collaboration of third parties for the purpose set forth in paragraph 1 of the present article, in accordance with paragraphs 2 and 3 thereof.

ANNEX VIII

ADDITIONAL PROTOCOL II TO THE TREATY FOR THE PROHIBITION OF NUCLEAR WEAPONS IN LATIN AMERICA (TREATY OF TLATELOLCO) */

The undersigned Plenipotentiaries, furnished with full powers by their respective Governments,

Convinced that the Treaty for the Prohibition of Nuclear Weapons in Latin America, negotiated and signed in accordance with the recommendations of the General Assembly of the United Nations in resolution 1911 (XVIII) of 27 November 1963, represents an important step towards ensuring the non-proliferation of nuclear weapons,

Aware that the non-proliferation of nuclear weapons is not an end in itself but, rather, a means of ahcieving general and complete disarmament at a later stage, and

Desiring to contribute, so far as lies in their power, towards ending the armaments race, especially in the field of nuclear weapons, and towards promoting and strengthening a world at peace, based on mutual respect and sovereign equality of States,

Have agreed as follows:

Article 1. The statute of denuclearization of Latin America in respect of warlike purposes, as defined, delimited and set forth in the Treaty for the Prohibition of Nuclear Weapons in Latin America of which this instrument is an annex, shall be fully respected by the Parties to this Protocol in all its express aims and provisions.

Article 2. The Governments represented by the undersigned Plenipotentiaries undertake, therefore, not to contribute in any way to the performance of acts involving a violation of the obligations of article 1 of the Treaty in the territories to which the Treaty applies in accordance with article 4 thereof.

Article 3. The Governments represented by the undersigned Plenipotentiaries also undertake not to use or threaten to use nuclear weapons against the Contracting Parties of the Treaty for the Prohibition of Nuclear Weapons in Latin America.

Article 4. The duration of this Protocol shall be the same as that of the Treaty for the Prohibition of Nuclear Weapons in Latin America of which this Protocol is an annex, and the definitions of territory and nuclear weapons set forth in articles 3 and 5 of the Treaty shall be applicable to this Protocol, as well as the provisions regarding ratification, reservations, denunciation, authentic texts and registration contained in articles 26, 27, 30 and 31 of the Treaty.

Article 5. This Protocol shall enter into force, for the States which have ratified it, on the date of the deposit of their respective instruments of ratification.

In witness whereof, the undersigned Plenipotentiaries, having deposited their full powers found to be in good and due form, hereby sign this Additional Protocol on behalf of their respective Governments.

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*/ A/C.1/946.

Annex IX

Status of the Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco) and its two Additional Protocols, as at 20 March 1969

A. Treaty

1. Signatures

Bolivia	14 February 1967
Colombia	14 February 1967
Costa Rica	14 February 1967
Chile	14 February 1967
Ecuador	14 February 1967
El Salvador	14 February 1967
Guatemala	14 February 1967
Haiti	14 February 1967
Honduras	14 February 1967
Mexico	14 February 1967
Panama	14 February 1967
Peru	14 February 1967
Uruguay	14 February 1967
Venezuela	14 February 1967
Nicaragua	15 February 1967
Paraguay	26 April 1967
Brazil	9 May 1967
Trinidad and Tobago	27 June 1967
Dominican Republic	28 July 1967
Argentina	27 September 1967
Jamaica	26 October 1967
Barbados	18 October 1968

2. Ratifications

*	Mexico	20 September 1967
	Brazil	29 January 1968
*	El Salvador	22 April 1968
*	Dominican Republic	14 June 1968
*	Uruguay	20 August 1968
*	Honduras	23 September 1968
*	Nicaragua	24 October 1968
*	Ecuador	11 February 1969
*	Bolivia	18 February 1969
*	Peru	4 March 1969
*	Paraguay	19 March 1969

B. Additional Protocol I

States to which the Protocol is open for signature	Signatures	Ratifications
United Kingdom of Great Britain and Northern Ireland	20 December 1967	
Kingdom of the Netherlands	15 March 1968	
United States of America		
France		

C. Additional Protocol II

States to which the Protocol is open for signature	Signatures	Ratifications
United Kingdom of Great Britain and Northern Ireland	20 December 1967	
United States of America	10 April 1968	
France		
People's Republic of China		
Union of Soviet Socialist Republics		

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* States which deposited, together with their respective instruments of ratification, declarations by which, in exercise of the right accorded by article 28, paragraph 2 of the Treaty, they waived all the requirements laid down in paragraph 1 of that article, so that the Treaty is already in force for all of them.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

ENDC/242
1 April 1969
ORIGINAL: ENGLISH

SWEDEN

Working Paper with suggestions as to possible provisions of a Treaty Banning Underground Nuclear Weapon Tests.

The States concluding this Treaty, hereinafter referred to as the "Parties to the Treaty",

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament,

Urging the co-operation of all States in the attainment of this objective,

Recalling the determination expressed by the Parties to the 1963 Treaty banning nuclear weapon tests in the atmosphere, in outer space and under water in its preamble to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time and to continue negotiations to this end,

Convinced that a continued testing of nuclear weapons brings about unforeseeable consequences in regard to imbalance and mistrust between States and causes immense diversion of human and material resources for purposes of war,

Heeding the appeals of the General Assembly of the United Nations for the suspension of nuclear weapon tests in all environments,

Affirming the principle that the benefits of peaceful applications of nuclear technology, including any technological by-products which may be derived by nuclear-weapon States from the development of nuclear explosive devices, should be available for peaceful purposes to all Parties to the Treaty, whether nuclear-weapon or non-nuclear-weapon States,

Affirming also the principle that resources, freed by measures of arms control and disarmament, should be channeled, to the greatest extent possible, to social and economic development, particularly of developing countries,

Declaring their intention to conclude, at the earliest possible date, a separate international agreement regarding nuclear explosions for peaceful purposes,

Have agreed as follows:

Article I

1. Each State Party to this Treaty undertakes to prohibit, to prevent and not to carry out any underground nuclear weapon test explosion, or, subject to the exemption embodied in paragraph 3, any other underground nuclear explosion, at any place under its jurisdiction or control.

2. Each State Party to this Treaty undertakes, furthermore, to refrain from causing, encouraging or in any way participating in, the carrying out of any such nuclear weapon tests explosion, or any such other nuclear explosion.

3. The provisions of paragraphs 1 and 2 of this Article do not apply to explosions which are carried out for construction or other peaceful purposes and which take place in conformity with an international agreement to be negotiated separately.

Article II

1. Each State Party to this Treaty undertakes to co-operate in good faith to ensure the full observance and implementation of this Treaty.

2. Each State Party to this Treaty undertakes to co-operate in good faith in an effective international exchange of seismological data in order to facilitate the detection, identification and location of underground events,

3. Each State Party to this Treaty undertakes to co-operate in good faith for the clarification of all events pertaining to the subject matter of this Treaty. In accordance with this provision, each State Party to the Treaty is entitled

a) to make inquiries and to receive information as a result of such inquiries,

b) to invite inspection on its territory or territory under its jurisdiction, such inspection to be carried out in the manner prescribed by the inviting Party,

c) to make proposals, if it deems the information available or made available to it under all or any of the preceding provisions inadequate, as to suitable methods of clarification.

4. Each State Party to this Treaty may bring to the attention of the Security Council of the United Nations and of the other Parties to the Treaty that it deems another Party to have failed to co-operate to the fullest extent for the clarification of a particular event.

Article III

1. Any Party to this Treaty may propose amendments to this Treaty. The text of any proposed amendment shall be submitted to the Depositary Governments which shall circulate it to all Parties to the Treaty. Thereupon, if requested to do so by one-third or more of the Parties to the Treaty, the Depositary Governments shall convene a conference, to which they shall invite all the Parties to the Treaty, to consider such an amendment.

2. Any amendment to this Treaty must be approved by a majority of the votes of all the Parties to the Treaty, including the votes of all nuclear-weapon States Party to this Treaty. The amendment shall enter into force for each Party that deposits its instrument of ratification of the amendment upon the deposit of instruments of ratification by a majority of all the Parties, including the instruments of ratification of all nuclear-weapon States Party to this Treaty. Thereafter, it shall enter into force for any other Party upon the deposit of its instrument of ratification of the amendment.

Article IV

1. This Treaty shall be open to all States for signature. Any State which does not sign the Treaty before its entry into force in accordance with paragraph 3 of this Article may accede to it at any time.

2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of ..... which are hereby designated the Depositary Governments.

3. This Treaty shall enter into force after its ratification by the States, the Governments of which are designated Depositaries of the Treaty, and ..... other States signatory to this Treaty and the deposit of their instruments of ratification.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or of accession, the date of the entry into force of this Treaty, and the date of receipt of any requests for convening a conference or other notices.

6. This Treaty shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

Article V

This Treaty shall be of unlimited duration. Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty, if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.

Article VI

This Treaty, the English, Russian, French, Spanish and Chinese texts of which are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Treaty shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.

In witness whereof the undersigned, duly authorized, have signed this Treaty.

Done in_____at_____this_____day of_____

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

ENDC/243
2 April 1969

ENGLISH
Original: RUSSIAN

BULGARIA, CZECHOSLOVAKIA, POLAND, ROMANIA
AND THE UNION OF SOVIET SOCIALIST REPUBLICS

Letter dated 2 April 1969 from the Representatives of the People's Republic of Bulgaria, of the Czechoslovak Socialist Republic, of the Polish People's Republic, of the Socialist Republic of Romania and of the Union of Soviet Socialist Republics addressed to the Special Representative of the Secretary-General of the United Nations

GE.69-7858

69-08712

We have the honour to transmit herewith the text of the Appeal by the States Members of the Warsaw Pact to all European countries, adopted at the Conference of the Political Consultative Committee in Budapest on 17 March 1969.

We request you to arrange for the above-mentioned Appeal by the States Members of the Warsaw Pact to all European countries to be circulated by the Secretariat as an official document of the Eighteen-Nation Committee on Disarmament.

Yours etc.,

(signed) Krum CHRISTOV,
Representative of the People's Republic of Bulgaria

(signed) Dr. Milan KLUZAK,
Representative of the Czechoslovak Socialist Republic

(signed) Henryk JAROSZEK,
Representative of the Polish People's Republic

(signed) Dr. Nicolae ECOBESCO,
Representative of the Socialist Republic of Romania

(signed) Aleksei A. ROSHCHIN,
Representative of the Union of Soviet Socialist Republics

APPEAL

BY THE STATES MEMBERS OF THE WARSAW PACT TO ALL EUROPEAN COUNTRIES

The People's Republic of Bulgaria, the Hungarian People's Republic, the German Democratic Republic, the Polish People's Republic, the Socialist Republic of Romania, the Union of Soviet Socialist Republics and the Czechoslovak Socialist Republic - the States Members of the Warsaw Pact - participants in the Conference of the Political Consultative Committee, expressing the aspirations of their peoples to live in peace and good-neighbourliness with the rest of the European peoples, as well as their firm resolve to assist in establishing an atmosphere of security and co-operation on our continent, address to all European States the following appeal for the redoubling of efforts aimed at strengthening peace and security in Europe.

The present and the future of the peoples of Europe is indissolubly linked with the maintenance and consolidation of peace on our continent. Genuine security and reliable peace can be ensured, if the thoughts, pursuits and energy of the European States are directed towards the aim of relaxing tension, solving with due regard to realities international problems that are ripe for solution and arranging for all-round co-operation on an All-European basis.

The way to good-neighbourliness, confidence and mutual understanding depends on the will and efforts of the peoples and governments of all European countries. The Europe of today, as it came out of the Second World War, is made up of more than thirty States, large and small, differing according to their social system, location and interests. By the will of history they are destined to live side by side, and no one can change this fact.

More and more governments, parliaments, Parties, political and social leaders are imbued with understanding of the responsibility that lies upon them before present and future generations for the prevention of a new military conflict in Europe. However, there are still active in Europe forces which put on the credit side of European development, not the settlement of disputes and peaceful agreements, but additional divisions and missiles, and new military programmes calculated for decades in advance. Also active together with them are those who have not drawn the proper lessons from the outcome of the Second World War, as a result of which German militarism and nazism were crushed. Their intrigues are a source of tension and bring complications into international relations.

The States participating in the Conference consider it their duty, in future also, to do all that lies in their power to shield Europe from the danger of new military conflicts, to clear the way for the development of co-operation among all European countries irrespective of their social system, on the basis of the principles of peaceful coexistence.

However complex unsolved problems may be, their solution must be achieved by peaceful means through negotiation and not through the use, or threat of the use, of force.

In analysing the situation in Europe, the States Members of the Warsaw Pact consider that there is a real possibility of ensuring European security through common efforts, taking into account the interests of all European States and peoples.

Almost three years ago States Members of the Warsaw Pact put forward at Bucharest a proposal to convoke a general European conference to consider questions of European security and peaceful co-operation. The contacts which have taken place since then have shown that not a single European government expressed opposition to the idea of a general European conference and that there are real possibilities of holding one. Not once since the Second World War have all the States of Europe come together, although there are numerous questions which await consideration at the conference table. From the standpoint of the interests of consolidating peace, there are no serious reasons for putting off the convening of a general European conference.

Such a conference would meet the interests of all European States. It would make it possible together to find ways and means of doing away with the division of Europe into military groupings and achieving peaceful co-operation among European States and peoples.

However, there are forces in the world which, because they seek to maintain the division of our continent, conduct a policy of fomenting tension, and refuse to facilitate peaceful co-operation among States and peoples, openly oppose the holding of such a conference and other measures to strengthen European security.

The States participating in the present Conference are convinced that the development of general European co-operation has been and continues to be the only real alternative to dangerous military confrontation, the armaments race and the dissensions which aggressive forces, seeking to undo the results of the Second World War and re-make the map of Europe, are trying and will continue to try to impose on Europe.

The States Members of the Warsaw Pact confirm their proposals against the division of the world into military blocs, against the armaments race and the resultant threat to the cause of international peace and security, and the other measures and proposals contained in the Declaration on the strengthening of Peace and Security in Europe adopted at Bucharest in 1966.

It is a vital necessity, for the European peoples, to avert new military conflicts, and to strengthen the political, economic and cultural links between all States on the basis of equal rights and respect for the independence and sovereignty of States. A durable system of European security will create the objective possibility and necessity of carrying out, by combined efforts, large-scale projects in the fields of power production, of transport, of the hydrospheric and atmospheric environment and of health, which have a direct bearing on the well-being of the population of the entire continent. It is precisely this common interest which can and should become the foundation for European co-operation.

One of the basic pre-conditions for safeguarding the security of Europe is the inviolability of the existing European frontiers, including the Oder-Neisse frontiers and those between the German Democratic Republic and the Federal Republic of Germany, recognition of the fact of the existence of those two countries, renunciation by the latter of its claims to represent the whole of the German people, and renunciation of possession in any form of nuclear weapons. West Berlin has a special status and does not belong to Western Germany.

A practical step towards strengthening European security would be a meeting in the immediate future between representatives of all the European States concerned in order to establish by mutual agreement the procedure for convening the Conference and to determine the items on its agenda. We are prepared to consider at the same time any other proposal regarding the method for preparing and convening the Conference.

The States participating in the Conference of the Political Consultative Committee address to all the countries of Europe an appeal for co-operation in convening a general European conference and in creating the necessary preconditions for ensuring that the Conference is successful and that it justifies the hopes which the peoples connect with it.

In order to bring about this important action, which would constitute an historical moment in the life of the continent, the States participating in the Conference make a solemn appeal to all European countries to strengthen the climate of confidence, and to that end to refrain from any action liable to poison the atmosphere in relations between States. They call upon them to go beyond general statements about peace to concrete acts and measures for the relaxation of tension and disarmament, for the development of co-operation and peace between the peoples. They appeal to all European governments to unite their efforts so that Europe may become a continent of fruitful collaboration between nations possessing equal rights, and a factor for stability, peace and mutual understanding throughout the world.

For the People's Republic of Bulgaria

Todor JHIVKOV

First Secretary of the Central Committee of the Bulgarian Communist Party, Chairman of the Council of Ministers of the People's Republic of Bulgaria

For the Hungarian People's Republic

Janos KADAR

First Secretary of the CC of the Hungarian Socialist Workers' Party

Enë FOK

Chairman of the Hungarian Revolutionary Workers and Peasants Government

For the German Democratic Republic

Walter ULBRICHT

First Secretary of the CC of the Socialist Unitary Party of Germany, President of the State Council of the German Democratic Republic

Willy STOFF

Chairman of the Council of Ministers of the German Democratic Republic

For the Polish People's Republic

Wladyslaw GOMULKA

First Secretary of the CC of the Polish United Workers Party

Josef CYRANKIEWICZ

Chairman of the Council of Ministers of the Polish People's Republic

For the Socialist Republic of Romania

Nikolae CEAUSESCU

General Secretary of the CC of the Romanian Communist Party, President of the State Council of the Socialist Republic of Romania

Ion Gheorghe MAURER

Chairman of the Council of Ministers of the Socialist Republic of Romania

For the Union of Soviet Socialist Republics

L.I. BREJHNEV

General Secretary of the CC of the Communist Party of the Soviet Union

A.N. KOSYGIN

Chairman of the Council of Ministers of the USSR

For the Czechoslovak Socialist Republic

Ludwik SVOBODA

President of the Czechoslovak Socialist Republic

Alexander DUBČEK

First Secretary of the CC of the Communist Party of Czechoslovakia

Oldřich ČERNIK

Chairman of the Federal Government of the Czechoslovak Socialist Republic

Budapest, 17 March 1969.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

ENDC/244
17 April 1969
Original: ENGLISH.

C A N A D A

Working Paper listing recent Canadian scientific papers concerning the detection and identification of underground nuclear explosions by seismological means

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Reference was made in the statement of the Canadian Delegation at the 404th meeting on 17 April to Canadian scientific papers concerning the detection and identification of underground nuclear explosions by seismological means published since the SIPRI meetings. For the convenience of the members of the ENDC the titles of these papers and particulars of their publication are set out below:

Canadian magnitudes of earthquakes and nuclear explosions in southwestern North America by P.W. Basham, Geophysical Journal Royal Astronomical Society, London, Volume 17, pages 1-13, 1969.

Operation and maintenance of the Yellowknife Seismological Array 1966-68 by E.B. Manchee and W.D. Cooper, Seismological Series of Dominion Observatory, Ottawa, 1968 (2).

Comparison of Montreal P-wave magnitudes from SP and IP seismograms by P.W. Basham, Seismological Series of Dominion Observatory, Ottawa, 1968 (3).

The following directly relevant papers are in press in the open literature:

Canadian magnitudes of Asian earthquakes and explosions by P.W. Basham.

Correlogram discrimination parameters from Yellowknife seismic array data by K. Whitham, P.W. Basham and H.S. Hasegawa, in press in Seismological Series of Dominion Observatory, Ottawa.

Theoretical response of a seismograph at Yellowknife to an underground explosion at N.T.S., by H.S. Hasegawa and K. Whitham, Canadian Journal of Earth Sciences, Ottawa, in press.

Epicentral determination by seismic arrays by D.H. Weichert, Nature, London, in press.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

ENDC/245
21 April 1969

ENGLISH
Original: FRENCH

ITALY

Working Paper setting forth suggestions for the adoption of an organic disarmament programme

1. In resolution A/RES/2454B (XXIII) the General Assembly requested the Conference "to make renewed efforts towards achieving substantial progress in reaching agreement on the question of general and complete disarmament under effective international control, and urgently to analyze the plans already under consideration and others that might be put forward to see how in particular rapid progress could be made in the field of nuclear disarmament".

2. Hence the adoption of agreements on effective disarmament measures remains the basic aim of the work of the Eighteen-Nation Conference.

3. It has to be noted that since 1962 (when the United States and the Soviet Union submitted their respective plans for general and complete disarmament) no effective disarmament measure has been adopted.

4. This is probably due to the fact that in 1962 it was thought that the process of general and complete disarmament could be initiated by immediate measures for the reduction of armaments. But experience has shown that disarmament must be "prepared" in an adequate manner and that the preparation itself of this process must, from the beginning, form the subject of a plan.

5. The Italian delegation therefore believes that in order to give a new impetus to the disarmament negotiations it is necessary to proceed on the basis of a plan or programme containing, on the one hand, the elements which must precede the disarmament process or serve to prepare for it, and, on the other hand, the methods of its implementation.

6. The Italian delegation considers that, in order to prepare for the disarmament process and to open the way thereto, it is necessary at the same time: (a) to halt the nuclear arms race, (b) to create a climate of confidence, (c) to undertake studies on concrete measures that will make it possible to reduce armaments and armed forces.

Furthermore, in order to make possible the complete implementation of a disarmament process, it is necessary to establish guidelines which should be provided for and laid down from the start.

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7. If the usefulness of this approach is recognized, it is necessary to envisage the conclusion of an agreement on an organic programme aimed at defining: (a) the content of the preparatory phase, and (b) the guidelines which are to govern the subsequent process of disarmament.

8. As regards the preparatory phase, it will be a matter, in particular, of determining the measures which it should comprise in order to achieve the aforementioned aims, namely, the halting of the nuclear arms race, the creation of a climate of mutual confidence and a study of concrete measures for arms reduction. The Italian delegation has already expressed its opinion in this regard and hopes that other delegations will also make their views known. In particular, the Italian delegation believes that the halting of the nuclear arms race must be regarded as an integral problem, the various aspects of which are interdependent. This is tantamount to recognizing that there is a link between the various measures to be adopted in this field, although this does not mean that agreement concerning a given measure must necessarily be subject to the conclusion of an agreement on other measures. Some degree of flexibility is necessary in practice.

9. As regards the determination of guidelines for the disarmament process as a whole, the Italian delegation believes that it could be based on the principles agreed as long ago as September 1961 between the United States and Soviet Governments. These principles, brought up to date and supplemented as far as possible, could be reproduced within the framework of a joint declaration by the Eighteen-Nation Conference.

For example, the original texts could be supplemented by stating:

(a) that the process of general and complete disarmament shall take place in a preparatory phase and in three successive phases of arms reduction until it is completed;

(b) that the three phases of arms reduction may be negotiated separately: the first phase simultaneously with the implementation of the preparatory phase; the second simultaneously with the implementation of the first; and the third simultaneously with the implementation of the second;

(c) that reductions in all categories of nuclear and conventional weapons shall be progressive, from the first phase onwards.

10. With regard to the stages of negotiation, the Italian delegation suggests, for its part, the following programme of work:

- to undertake immediate negotiations on an organic disarmament programme;
- to carry on, at the same time, negotiations on partial disarmament measures that have already been considered previously"
- after the conclusion of an agreement on a general programme, and after obtaining concrete results in the field of partial measures(which are an essential part of the preparatory phase), to begin negotiations on the first phase of the disarmament process.

11. The Italian delegation will be grateful to other delegations for any suggestions they may wish to put forward in regard to the points submitted for their consideration.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

ENDC/246
15 May 1969
ORIGINAL: ENGLISH

NIGERIA

Working Paper on the Comprehensive Test Ban Treaty

The question of verification constitutes the greatest stumbling block to concluding a Comprehensive Test Ban. Although much progress has been made in developing the means of identifying earthquakes or nuclear explosions through long range teleseismic systems, the experts are all agreed that there is yet a gap to be bridged to make the seismic identification system foolproof.

In the general atmosphere of suspicion and distrust among states it is little wonder that exclusive reliance on seismic identification has not found full acceptance.

The Nigerian Delegation considers that to inspire the confidence necessary for concluding the Test Ban Treaty, a foolproof method of verification must be established. This will involve the augmentation of seismic verification with some other form of verification where the former is inconclusive.

The Nigerian Delegation is well aware of the reservations about "on-site" inspections. The Delegation believes that these reservations do not attach to the system, per se, but stem from the uneasiness that "on-site" inspections might be exploited for purposes of espionage. If therefore the possibility of espionage can be eliminated or reduced considerably, "on-site" inspections, where seismic verifications are inconclusive will, it is hoped, be acceptable.

In its working paper ENDC/232 of 20th August 1968 the United Kingdom Delegation proposed the establishment of a Committee that will undertake "on-site" inspections if strong evidence of a possible infringement of a Test Ban Treaty was produced. The proposal envisaged the inclusion of the super-powers in the Committee. Such an inclusion will not remove the basis of the reservations about "on-site" inspections. To overcome this short-coming, the Nigerian Delegation now recommends that the Committee should be composed, exclusively, of non-aligned countries that have signed the Non-Proliferation Treaty and possess the technological know-how to cope with the implications of such inspections.

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Such a Committee of non-aligned countries should allay apprehensions about "on-site" inspections. Since they would have signed the Non-Proliferation Treaty, the members of the Committee should not be interested in atomic weapon espionage because that Treaty prohibits them from putting into practical use any knowledge of nuclear weapons they may thus unlawfully acquire. On the other hand, their being non-aligned will ensure that they are unlikely to act as agents of the super-powers.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

ENDC/247
15 May 1969
ORIGINAL: ENGLISH

NIGERIA

Working Paper on proposed amendment to Article I of the USSR draft Treaty on Prohibition of the Use For Military Purposes of the Sea-bed And The Ocean Floor And The Sub-soil Thereof

After ..... "Coastal states is prohibited" in paragraph 1 of Article 1 add:

"provided that where such 12 mile maritime zone overlaps a similar zone in respect of another state, signatory to the treaty, both states so affected shall waive their rights in regard to the use of such maritime zone for military purposes and shall accept the verification obligations in this treaty within such zone without prejudice to their rights under the United Nations Continental Shelf Convention of 1953".

GE.69-10744
69-15020

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

ENDC/248
21 May 1969

ORIGINAL: ENGLISH

CANADA

Working Paper listing recent Canadian scientific papers on seismological research with abstracts now available

For the convenience of members of the ENDC the titles and available abstracts on papers produced recently in Canada on seismological research are set out below. The list includes articles to which reference has already been made in document ENDC/244 of April 17, 1969, and other papers in press or contributed to the Conference on Seismological Data Exchange, Stockholm, May 1966, and the Seismic Study Group convened by the International Institute of Peace and Conflict Research (SIPRI) in Sweden, April and June, 1968:

(a) Array Research

H. Somers and E.B. Manchee: Selectivity of the Yellowknife Seismic Array, Geophys. J.R. astr. Soc., Vol. 10, p. 401, 1966. Abstract 1.

E.B. Manchee and H. Somers: The Yellowknife Seismological Array, Publ. Dom. Obs., XXXII, No. 2, 1966. Abstract 2.

D.H. Weichert, E.B. Manchee and K. Whitham: Digital Experiments at Twice Real-time Speed on the Capabilities of the Yellowknife Seismic Array, Geophys. J. R. astr. Soc., Vol. 13, p.277, 1967. Abstract 3.

D.H. Weichert: Computer Hardware and Programming Requirements for the Delay-Sum-and-Correlate Method of Processing Seismic Array Data, Seism. Series, Dom. Obs., 1967-2. Abstract 4.

F.M. Anglin and E.B. Manchee: Discrimination of Temporally Overlapping Seismic Events, Nature, Vol. 218, No. 5143, 1968. No abstract.

E.B. Manchee and D.H. Weichert: Epicentral Uncertainties and Detection Probabilities from the Yellowknife Seismic Array Data, BSSA, Vol. 58, p. 1359, 1968. Abstract 5.

K. Whitham, P.W. Basham and H.S. Hasegawa: Correlogram Discrimination Parameters from Yellowknife Seismic Array Data, Seism. Series, Dom. Obs., 1968-5. No abstract.

GE.69-11134
69-15023

K. Whitham and D.H. Weichert: Geophysical Results from Digital Processing of Yellowknife Array Signals, Travaux Scientifiques, fasc. 24, 1968. Abstract 6.

D.H. Weichert: Epicentre Determination by Seismic Arrays, Nature (in press). No abstract.

E.B. Manchee and W.D. Cooper: Operation and Maintenance of the Yellowknife Seismological Array, 1966-8, Seism. Series, 1968-2. No abstract.

D.H. Weichert and E.B. Manchee: A Photogrammetric Resurvey of the Yellowknife Seismic Array, Seism. Series, Dom. Obs., 1969-2. No abstract.

D.H. Weichert and K. Whitham: Calibration of the Yellowknife Seismic Array with First Zone Explosions, submitted to Geophys. J. R. astr. Soc. Abstract 7.

(b) Surface Wave Studies

P.W. Basham: Canadian Magnitudes of Earthquakes and Nuclear Explosions in Southwestern North America, Geophys. J.R. astr. Soc., Vol. 17, p. 1, 1969. Abstract 8.

P.W. Basham: Canadian Magnitudes of Asian Earthquakes and Explosions, submitted to Geophys. J. R. astr. Soc., 1969. Abstract 9.

(c) Signal Characteristics

P.W. Basham: Comparison of Montreal P-Wave Magnitudes from Short-Period and Intermediate Period Seismograms, Seism. Series, Dom. Obs., 1968-3. No abstract.

H.S. Hasegawa: A Study of the Effects of the Yellowknife Crustal Structure upon the P Coda of Teleseismic Events, Geophys. J. R. astr. Soc. (in press). Abstract 10.

H.S. Hasegawa and K. Whitham: Theoretical Response of a Seismograph at Yellowknife to an Underground Explosion at the Nevada Test Site, Can. J. Earth Sci. (in press). No abstract.

P.W. Basham and R.M. Ellis: The Composition of P Codas using Magnetic Tape Seismograms, BSSA (in press). Abstract 11.

* * *

Abstract - 1

SELECTIVITY OF THE YELLOWKNIFE SEISMIC ARRAY

H. Somers and E.B. Manchee

An idealized signal, consisting of a noise-free, single-frequency infinite-duration input, is theoretically applied to the Yellowknife seismic array. A comparison of the output responses resulting from three possible signal processing techniques, viz. cross-correlation, sumall-squared, and multiple correlation, indicates that cross-correlation is the preferred technique for determining the azimuth and velocity of arrival of the incident seismic energy.

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Abstract - 2

THE YELLOWKNIFE SEISMOLOGICAL ARRAY

E.B. Manchee and H. Somers

The United Kingdom Atomic Energy Authority, in co-operation with the Department of Mines and Technical Surveys of Canada, has established a large seismological array at Yellowknife, Northwest Territories. The purpose of the array is to investigate the possibility that teleseismic detection and identification of underground nuclear tests anywhere in the world may be possible using a relatively small number of similar stations. The Yellowknife Array is a research and development facility, not an operational monitoring station.

Nineteen evenly spaced seismometer vaults are arranged in an asymmetrical cross, each arm of the cross being 22.5 km in length. The output of the single vertical Willmore Mark II seismometer in each vault is recorded on a separate track on magnetic tape. The large size of the array makes asimuth searching and velocity filtering desirable and necessary in the processing of the data. The Department of Mines and Technical Surveys is in the process of acquiring digital computing facilities which will allow the magnetic tapes to be searched for all events at twice real time speeds. In addition to the identification problem, many routine seismological problems may also be investigated by use of this new and powerful tool.

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Abstract - 3

DIGITAL EXPERIMENTS AT TWICE REAL-TIME SPEED ON THE CAPABILITIES OF THE YELLOWKNIFE SEISMIC ARRAY

D.H. Weichert, E.B. Manchee and K. Whitham

A number of experimental seismic arrays have been constructed in the past few years. One such array in the form of an asymmetric linear cross has been built at Yellowknife,

NWT, by the United Kingdom Atomic Energy Authority in collaboration with the Canadian Department of Mines and Technical Surveys. Data from the 19 individual seismometers are recorded continuously on FM magnetic tape. The analogue tape data are multiplexed into a digital computer at twice the recording speed. The system allows the formation of 168 beams by the delay and sum method: different approaches to this problem and their implications for real time processing are discussed. The correlations between the phased sums of the two lines are calculated and events are detected automatically when the correlation rises above a trigger level for a preset length of time. For each event a selection of logarithmic correlations is output in analogue form, together with other pertinent information.

The recorded data have been analysed in two modes: free search, in which the entire tape is searched by the computer; and selective search fine scan, in which events are selected visually from a helicorder record and subjected to a variety of search procedures. A 30-day free search experiment indicated that the 50% detection probability level is m4.1 ± 0.2. The location accuracy of the events detected during the 30-day experiment is of the order of 300 km in latitude and longitude and fine scan experiments have shown that this accuracy may be improved. The signal/noise ratio improvement is close to the theoretical value.

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Abstract - 4

COMPUTER HARDWARD AND PROGRAMMING REQUIREMENTS FOR THE
DELAY-SUM-AND-CORRELATE METHOD OF PROCESSING SEISMIC ARRAY DATA

D.H. Weichert

The data from the Yellowknife seismic array have been processed digitally in Ottawa since early 1966. The method used was the sum-delay-and-correlate method and required approximately 16,000 words of computer memory when conducted at twice real-time speed, because of trade-offs between memory and processing speed. For the particular configuration of the Yellowknife array, and for a sufficiently uniform crust, it is demonstrated that, with an average third generation computer with about 4 usec addition time and 24-bit word length, the data could be processed continuously at four times the recording speed. About 100 beams would be maintained, covering uniformly the third zone.

The routine formation of digital files for all detected events is not possible at four times the recording speed, unless more than one direct-memory-access channel is incorporated in the digital computer system. With two such channels, approximately one digital tape would be required per recording week. With only one channel as presently approved for purchase, digital tape formation for international data exchange is possible, but at twice real-time speed the tape utilization is only 18%.

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Abstract - 5

EPICENTRAL UNCERTAINTIES AND DETECTION PROBABILITIES FROM THE YELLOWKNIFE SEISMIC ARRAY DATA

E.B. Manchee and D.H. Weichert

Analog recording tapes from the Yellowknife seismic array have been processed digitally in Canada for over a year, with concentration on the automatic detection and epicenter location of events between 26° and 90° distance, using short period P-wave arrivals.

For the purpose of detection, signals from the individual seismometers in the two arms of the cross array are analog band-pass filtered, digitized at 20 samples/s, multiplexed into a digital computer, velocity and azimuth filtered and correlated, using an exponentially weighted integration over time with an equivalent width of 1.6s. The correlograms for up to 168 phased beams are scanned for values exceeding a present trigger level and an event is recorded when the level is passed consistently a number of times. In late 1966, during a seismically quiet period and with the array fully operational, the 50 per cent automatic detection level achieved by this method for events in the Third Zone to Yellowknife was m4.0 ± 0.1, slightly better than the level of an analog trigger operated at the station which uses the correlogram method for a single unphased beam only. The 50 per cent detection level of the Yellowknife standard station is about m4.4 and thus the array-computer automatic detection method gives about Δm0.4 improvement, which is expected from the processing method used if the noise is largely uncorrelated. No significant variations in the detection level with asimuth have yet been observed.

Approximate epicenter locations are determined from the best apparent arrival vector. The best vector is assumed to be given by the maxima of parabolas at constant azimuth and wave number interpolated between the highest values of the correlograms.

USCGS P.D.E. information is used in conjunction with the J-B tables to calculate an expected apparent arrival vector. The difference between the expected and best interpolated arrival vectors has an average deviation of about 6 ms/km. Their distribution does not suggest a simple crustal or upper mantle cause under the array station.

* * *

Abstract - 6

GEOPHYSICAL RESULTS FROM DIGITAL PROCESSING OF YELLOWKNIFE ARRAY SIGNALS.

K. Whitham and D.H. Weichert

Results are described from the automatic digital processing of teleseismic signals from the medium aperture crossed seismic array at Yellowknife, N.W.T. Developments in the automatic processing method are described which increase the speed from that previously described. Epicentral uncertainties from a single array determination are outlined.

Intensive digital processing is described of a tape obtained by the superposition of the signals from the Early Rise chemical explosions at an epicentral distance of about 21°. The results and other observations from chemical explosions at 11° to 17° are compared with the predictions for the average upper mantle structure derived from observations of chemical explosions on the Canadian standard seismic network at long ranges. Preliminary upper mantle structural interpretations are given incorporating phase velocity data with time and distance data. The difficulties in self-consistent interpretations using velocity filtering are outlined. The best model to date requires only a very weak P-wave low velocity layer at considerable depth in the PreCambrian Shield.

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Abstract - 7

CALIBRATION OF THE YELLOWKNIFE SEISMIC ARRAY WITH FIRST ZONE EXPLOSIONS

D.H. Weichert and K. Whitham

Recordings from a crustal seismic experiment, which was conducted in the Yellowknife area in 1966, were used for calibration of the Yellowknife seismic array. In the immediate vicinity of the array the crust is found to be very uniform. A superficial layer with an intercept time of 0.172 ±0.012 s and unknown velocity is underlain by a crust with a P-wave velocity of 6.04 ±0.01 km/s near the top: assuming this velocity constant throughout the second layer, the total thickness of the crust is about 34 ±2 km. The Mohorovicic discontinuity is horizontal under the array within the resolution of this experiment and the apparent P_n velocity is 8.15 km/s. At a distance of a few tens of kilometers the crustal uniformity breaks down. The distances are such that, for most teleseismic signals, the effect of these inhomogeneities should be negligible.

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Abstract - 8

CANADIAN MAGNITUDES OF EARTHQUAKES AND NUCLEAR EXPLOSIONS IN SOUTHWESTERN NORTH AMERICA

P. W. Basham

Canadian seismograph network mean body-wave and surface-wave magnitudes are computed for 28 earthquakes and 28 nuclear explosions in southwestern North America to test the effectiveness of the surface- vs body-wave discriminant between earthquakes and explosions for purely continental paths. For the present Canadian network, the magnitude threshold of discrimination is about m4.5. A comparison is made between these and other (intercontinental) surface- vs body-wave relationships by normalizing all data to standard magnitudes. Surface-wave attenuation for intercontinental paths limits the effectiveness of the discriminant to magnitudes about 1.0 higher than the same recording techniques can achieve for intracontinental paths.

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Abstract - 9

CANADIAN MAGNITUDES OF ASIAN EARTHQUAKES AND EXPLOSIONS

P. W. Basham

A suite of 33 Asian earthquakes and 36 central Asia and Novaya Zemlya nuclear explosions are used to define the minimum detection levels in terms of surface-wave and body-wave magnitudes and the discrimination thresholds of the M versus m discriminant for the Canadian seismograph network. Under low microseismic noise conditions surface-waves can be observed for earthquakes down to m4.9 and explosions down to m5.9 for the region near the central Asia test site. For events above these magnitudes, the M versus m relationships provide reliable discrimination between earthquakes and explosions. Comparison with an intracontinental study leads to the conclusion that the discrimination threshold is limited by path effects and greater distances to events about ml.3 larger near the central Asia test site than near the Nevada test site.

* * *

Abstract - 10

A STUDY OF THE EFFECTS OF THE YELLOWKNIFE CRUSTAL STRUCTURE UPON THE P CODA OF TELESEISMIC EVENTS

H. S. Hasegawa

The short-period P codas of seven earthquakes and four underground nuclear events recorded in the Yellowknife region of the Canadian Shield are analyzed both in the time and in the frequency domains. In the time domain, the applications of a "P-detection" filter to the earthquake events facilitates the identification of several phases (pP and sP) in the first 25 sec. of the P coda. The application of this filter to two nuclear events (originating at the Nevada Test Site) assists in the separation and in the identification of the crustal reverberations at the respective sources. In the frequency domain studies, the application of the spectral ratio test to six earthquake events resulted in poor agreement between the theoretical and the experimental spectral ratio curves; closer agreement was obtained for the nuclear events. Since the earthquake events did not possess the appropriate type of waveform for the spectral ratio test, it is not possible, at this stage, to pass judgment as to whether the crustal layering at Yellowknife fulfils the requirements of Haskell's matrix theory.

Signal-generated noise studies are based on the observation of P-generated SH and SV waves. Anomalous P-SH conversion is much less in this region than in the sedimentary basin of central Alberta. However, there are indications of appreciable anomalous P-SV conversion; the source is likely in the lower part of the crust and possibly in the upper part of the mantle at Yellowknife.

* * *

Abstract - 11

THE COMPOSITION OF P CODAS USING MAGNETIC TAPE SEISMOGRAMS

P. W. Basham and R. M. Ellis

The short-period P codas of 41 seismic events recorded on the plains of western Alberta are examined for compressional and shear phases. A non-linear "P-Detection" polarization filter is applied to 25 seconds of the records following the P onset. Numerous compressional wave signal pulses are detected amid the codas; these include PcP and PKP phases for events at appropriate distances and the common depth phases pP and sP. The phase pP is detected on the records of 25 events, 16 of which have reported

depths shallower than 40 km. For events with pP visible at two stations, pP-P times are accurate to about ±1 second, allowing focal depth assignment to an accuracy of about ±15 km. Locally-generated shear phases are studied using particle motion plots in the vertical (vertical-radial) and horizontal planes. These are large variations in SV/P amplitude ratios for individual events at stations separated by 60 to 160 km. Anomalous SV and SH-type motions are attributed to a complex Precambrian basement.

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